

**COMPACT OPTICAL SENSING SYSTEM**

**ABSTRACT**

A compact optical sensing system is used in hardcopy devices for scanning and/or printing images, for instance, using inkjet printing technology in desktop printing or in photographic printers appearing in grocery and variety stores. Several light emitting diodes ("LEDs") illuminate a sheet of print media, and one or more photodiodes receive light reflected from the sheet. The photodiode generates signals in response to the light received, and the hardcopy device uses these signals to adjust printing parameters for optimal print quality. Using a chip-on-board process, the bare silicon die for each component is wire bonded directly to a printed circuit board assembly, allowing at least four LEDs (blue, green, red and soft-orange) to be grouped closely together in a space smaller than that occupied by a factory-made, single-packaged LED. A calibrating system uses a white target covered for cleanliness by a windowed door which is opened/closed by a printhead carriage.